

Desert Magazine Book Shop

GUIDEBOOK TO THE SAN JACINTO MOUNTAINS by Russ Leadabrand. An authoritative writer whose guidebooks have been used by discerning travelers for many years, Leadabrand is updating and revising his books. His new travel guide to the Riverside County mountain areas covers the Deser Divide Country, Cahuilla Mountain, Thomas Mountain and a portion of the Santa Rosa Mountains, Illustrated with photographs and maps, heavy paperback, 102 pages, \$1.95.

DUTCH OVEN COOKBOOK by Don Holm. Wild-life editor of the Partland Oregonian, the author has spent his life exploring and writing about the outdoors, so his recipes for preparing food in a Dutch Oven tome from experience. If you haven't had food cooked in a Dutch Oven, you haven't lived ... and if you have you will find these recipes new and exciting culinary adventures—as well as his style of writing. Heavy paperback, 100 pages, \$3.95.

GOLD AND SILVER IN THE WEST by T. H. Watkins. The author brings together for the first time the entire story of gold and silver mining in he West. It tells of conquistadores chasing myths in Old Mexico, gold and silver strikes in the West, Alaska, Mexico and Canada, the rise and fall of mining ventures, promotional schemes and today's operations. Hordbound, large format, 212 illustrations (75 ir 4 color) 288 pages, \$13.95 until Dec. 31—then \$17.50.

LOST MINES OF THE GREAT SOUTHWEST by John D. Mitchell. The first of Mitchell's lost mine books is now available after having been out of print for years. Reproduced from the original copy and containing 54 articles based on accounts from people Mitchell interviewed. He spent his entire adult life investigating reports and legends of lost mines and treasures of the Southwest. Hardcover, illustrated, 175 pages, \$7.50.

NEVADA GHOST TOWNS AND MINING CAMPS by Stanley W. Paher. Covering all of Nevada's 17 counties, Paher has documented 575 mining camps, many of which have been erased from the earth. The book contains the greatest and most complete collection of historic photographs of Nevada ever published. This, caupled with his excellent writing and map, creates a book of lasting value, large 9x11 format, 700 photographs, hardcover, 492 pages, \$15.00.

MOCKEL'S DESERT FLOWER BOOK by Henry and Beverly Mockel. The well-known painter of desert wildflowers has combined his four-color sketches and black and white photographs to describe in detail so the layman can easily identify wildflowers, both large and small. Microscopic detail makes this an outstanding book for identification. Special compressed fiber cover which will not stain. 54 full-color illustrations with 72 life-size drawings and 39 photographs, 316 pages, \$5.95.

EXPLORING DEATH VALLEY by Ruth Kirk. Good photos and maps with time estimates from place to place and geology, natural history and human interest information included. Paperback. \$1.95.

COLORFUL DESERT WILDFLOWERS by Grace and Onas Ward. Segregated into categories of red, blue, white and yellow for easier identification, there are 190 four color photos of flowers found in the Mojave, Colorado and Western Arizona deserts, all of which also have common and scientific names plus descriptions. Heavy, slick paperback. \$4.50.



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DEAD MEN DO TELL TALES by Lake Erie Schaefer. A sequel to BURIED TREASURE & LOST MINES by Frank Fish, the author knew Fish for many years and claims he was murdered. Her book adds other information on alleged lost bonanzas, plus reasons why she thinks Fish did not die a natural death as stated by the authorities. Paperback, illustrated, 80 pages, \$3.00.

LOST MINES & BURIED TREASURES ALONG THE OLD FRONTIER by John D. Mitchell. The second of Mitchell's books on lost mines which was out-of-print for many years is available again. Many of these appeared in DESERT Mgazine years ago and these issues are no longer available. New readers will want to read these. Contains the original map first published with the book and one pinpointing the areas of lost mines. Mitchell's personal research and investigation has gone into the book. Hardcover, 240 pages, \$7.50.

COMMON EDIBLE & USEFUL PLANTS OF THE WEST by Muriel Sweet. A description with artist drawings of edible (and those not to touch) plants along with how Indians and pioneers used them. Paperback, 64 pages, \$1.50.

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DESERT GEM TRAILS by Mary Frances Strong. DESERT Magazine's Field Trip Editor has revised and brought up to date her popular field guide for rockhounds. She has deleted areas which are now closed to the public and added new areas not covered before. The maps have also been updated. This is the "bible" for both amateur and veteran rockhounds and back country explorers. Heavy paperback, 80 pages and still the same price. \$2.00.

GOLDEN MIRAGES by Philip A. Bailey. Out-of print for more than 20 years, this was a collector's item. A valuable book for last mines and buried treasure buffs, it is beautifully written and gives first-hand interviews with old-timers long since passed away. Excellent for research and fascinating for arm-chair readers. Hardcover, illustrated, 353 pages, \$9.95.

GHOSTS OF THE GLORY TRAIL by Nell Murbarger. A pioneer of the ghost town explorers and writers, Miss Murbarger's followers will be glad to know this book is once again in print. First published in 1956, it is now in its seventh edition. The fast-moving chronicle is a result of personal interviews of old-timers who are no longer here to tell their tales. Hardcover, illustrated, 291 pages, \$7.00.

BURIED TREASURE & LOST MINES by Frank Fish. One of the original treasure hunters provides data on 93 lost bonanzas, many of which he personally searched for. He died under mysterious circumstances in 1968 after leading an adventurous life. Illustrated with photos and maps. Paperback, 68 pages, \$2.00.

LAND OF POCO TIEMPO by Charles F. Lummis. A reprint of the famous writer and historian of his adventures among the Indians of New Mexico. Lummis was one of the foremost writers of the West. Paperback, 236 pages, \$2.45.

BAJA CALIFORNIA MAP AND GUIDE by Walt Wheelock. An updated map and guide to Baja California showing the roads that have been paved and those scheduled for improvement. Also travel suggestions relative to gear, gasoline and supplies. Anyone going to Baja should have this latest information. \$1.95.

CORONADO'S CHILDREN by J. Frank Doby. Originally published in 1930, this book about lost mines and buried treasures of the West, is a classic and is as vital today as when first written. Dobie was not only an adventurer, but a scholar and a powerful writer. A combination of legends and factual background. Hardcover, 376 pages, \$3.95.

SELDOM SEEN SLIM by Tom Murray. Profiles and vignettes of the colorful "single blanket jackass prospectors" who lived and died as they looked for gold and silver in Death Valley. Slick paperback, exclusive photos of the old-timers, 65 pages, \$3.00.

Using topographic maps as basic underlays. Wes has compiled two excellent detailed maps for back country explorers of the Mojave and Colorado Deserts. Maps show highways, gravel roads, jeep trails plus historic routes and sites, old wells, which are not on modern-day maps, plus ghost towns, Indian sites, etc. Mojave Desert Overview covers from U.S. 395 at Little Lake to Boulder City, Nevada, to Parker Dam to Victorville. Colorado Desert Overview covers from the Mexican border to Joshua Tree National Monument to Banning to the Arizona side of the Colorado. \$3.00 each. Be certain to state which map (or both) when ordering.

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MARVEL BARRETT Circulation Manager



Volume 35, Number 9 SEPTEMBER, 1972

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THE COVER:

Once a perilous — and sometimes fatal — experience, running the "wild rivers" of the West today with veteran and licensed river guides is safer than driving on a metropolitan freeway, especially since there is no oncoming traffic! Cataract Canyon in the upper Colorado River has both smooth water and rugged rapids as described in an article in this isssue. Photo by Enid C. Howard, Monticello, Utah.

DESERT HIKING TRAIL Robert W. Gail

UTAH'S DREAM MINE George W. Thompson

SHOVEL-NOSED SAND SNAKE K. L. Boynton

APACHE RECREATION LAND William D. Fitzwater

RUNNING THE COLORADO RAPIDS Jack Pepper

WOOD IN BROKEN HILLS Mary Frances Strong

UTAH'S HEBER CREEPER Carol-Ann Fuller

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SEND FOR NEW CATALOG No. 9-B LOTTIE M. SHIPLEY



A Peek Publisher's

IN THE "Letters to the Editor" page there is a selection of the hundreds of letters we received in response to our editorial Time Is Running Out in the July issue.

It also appears that metal detectors have been placed on the list of "destructive weapons" by a zealous ranger of the National Park Service of the United States Department of the Interior.

While using her metal detector on the isolated beaches of Padre Island, Texas, Joyce Smith was cited by a ranger who also confiscated her metal detector. She could be fined up to \$500 and faces a six-month jail sentence.

We do not know the exact details of the incident, and with due respect to the many fair-minded rangers within the National Park Service-and the various state parks-we are not making a hasty judgement of the citation.

But from the information we have received it appears that Mrs. Smith and her family were having a weekend pleasure outing and using their metal detectors to hunt coins on public land and not destroying public property. Yet she was cited.

Also, according to our information, the ranger was enforcing the Antiquities Act of 1916 and a later amendment. We have stated many times the strict interpretation of the act is both outmoded and stupid and that the act should be revised to meet the needs of today.

An explanation of the act will be printed in a forthcoming issue.

The citation of Mrs. Smith - which could have happened to you-is just another example of why we who want to keep our public lands open for recreation, should band together to protect our inherent rights.

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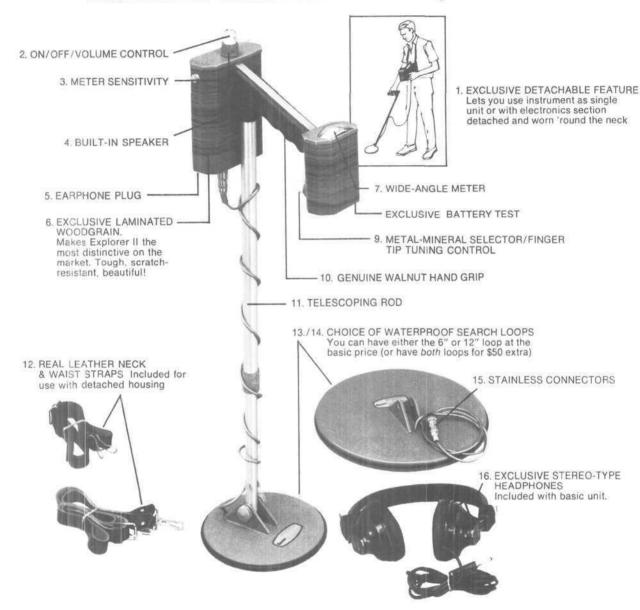


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Book Reviews

by Jack Pepper

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100 HIKING TRAILS By Don and Roberta Lowe



Since hiking is one of the few ways to get away from the smog and hitherto uncrowded areas, back-country enthusiasts are combining their 4WD safaris with climbing expeditions. They leave their ORVs (off-road vehicles) in secluded areas and (especially during the summer months) "head for the hills."

It's good for the lungs, helps reduce those flabby muscles and gets you really close to Mother Nature. Don and Roberta Lowe have written two books on California's hiking trails: one on Northern California and the other on Southern California. Each book describes 100 hiking trails in the areas covered and are grouped in geographic locations.

As a long-time desert rat and one not used to climbing into short-of-breath altitudes, I appreciate their guide since they describe the length of time, distance, steepness of the climb and where to stop so you can breath and enjoy the scenery.

Their trips are described as "one day" or "backpack" depending upon how long you want to stay or whether you are an amateur or professional hiker. Each trip described includes a detailed topographic map, scenic photograph of the area and all pertinent information, including history and nature.

I have found that leaving my 4WD and "heading for the hills" on foot is a rewarding experience — especially when I know where I am going, what to look for and when I will get back.

Both books are 225 pages, heavy paperback, \$5.95 each. When ordering state whether you want NORTHERN or SOUTHERN Hiking Trails.

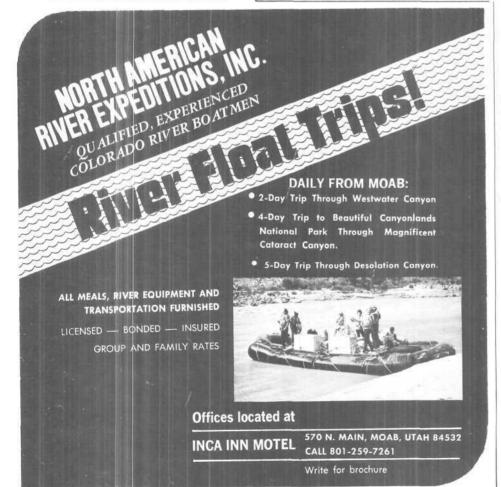
GEOLOGY FIELD GUIDE TO SOUTHERN CALIFORNIA By Robert P. Sharp



When you hear the word "geology" it conveys the dictionary description of "a science that deals with the earth's crust, the layers of which they are composed and their history." It also reminds us of the time we had to take "Geology I" to get the required credits in school.

Man, that was a dry subject. I got through with a "C" and then only because the teacher took the class on field trips so I could enjoy getting away from the confines of the four walls.

I am certain I would have made an "A" if this book had been the required academic reading. How would you like this Preface in your old text book?



"Most things are interesting, even old bleached cow bones, provided you know something about them. Indeed, much of the pleasure of life comes from knowledge, familiarity and understanding of things, be they related to sports, music, drama, science, art, birds and bees, flowers and trees.

"Among scientists, geologists are reputed to have as much fun as anybody because of their understanding and appreciation of the natural environment. An objective of this effort is to share this fun with you."

I am not saying this book will replace the comic section of the Sunday paper for the youngsters as you drive along the highway, but it is a refreshing and informative way to study the geology of California as you take your Sunday outing or weekend 4WD excursion. Before doing so, however, I would suggest you use it to bone up on your geology as your progeny may be reading it in the back seat and ask some questions you might not be able to answer-after all "Geology I" was a long time ago.

With its detailed aerial and location maps, photographs of the terrain, mileage in each area covered and easy-to-understand geological descriptions, plus what fossils to look for and history of the area, you will find it easy reading. Also, if you bone up, you just might get a passing grade and not have to take a final exam within four stuffy walls. .

Heavy paperback, geological time schedule, glossary, well illustrated, 192 pages, \$2.95.

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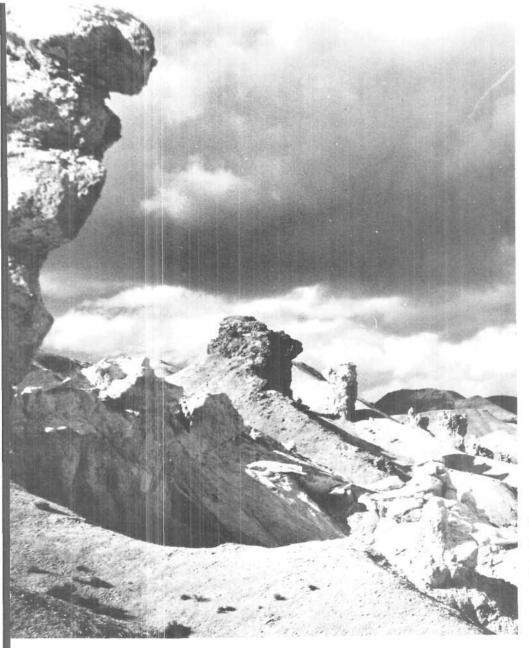
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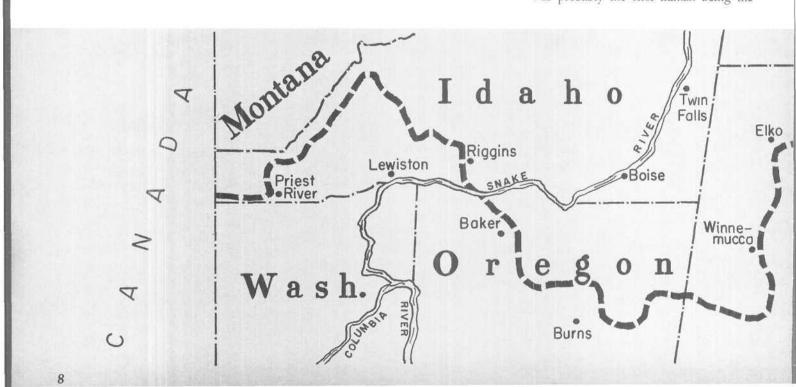
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Desert Hiking Trail

by Robert W. Gail

A sed dollar cooled his feet in the icy waters of the upper Blitzen River high on Steens Mountain in Eastern Oregon, he noticed something moving toward him in the water. He stood still and watched as a beaver swam right up to him and investigated his feet. There could be no doubt that the beaver had never seen a human being before, and was as curious about Ed as Ed was about him. While this was probably the first human being the



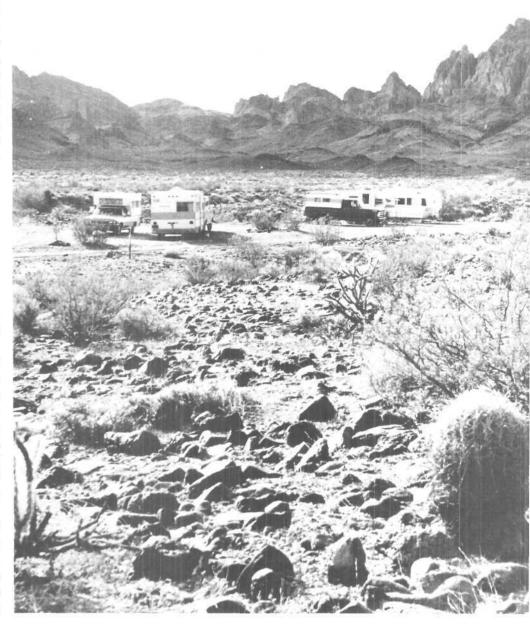
Although there has been no official action by Congress or money appropriated, the Desert Hiking Trail is fast becoming a reality. The U.S. Forest Service and Bureau of Land Management are cooperating in laying out the trail which will extend from Canada to Mexico through such scenic areas as the Nevada landscape (opposite page) and the Turtle Mountains (right) in California.

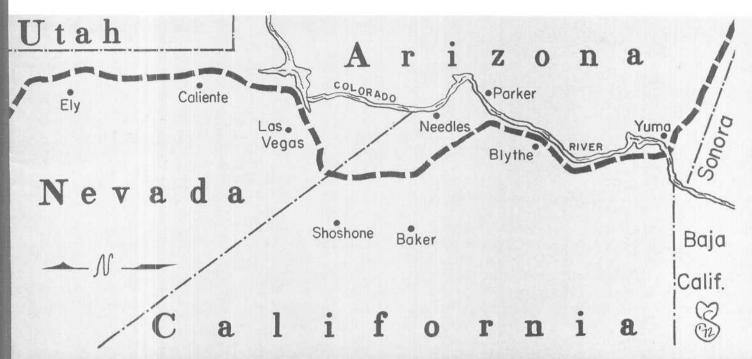
beaver had ever seen, he was not likely to be the last.

Ed was a member of the Mazamas, a seventy-five-year-old hiking and mountain climbing club of Portland, Oregon, and one of a party making the first official hike over a part of the new Desert Hiking Trail.

Desert Hiking Trail? That's right! Planned to cross the United States from Canada to Mexico, the Desert Trail has become more than a dream and is rapidly becoming a reality. Routes have already been proposed through Oregon by the U.S. Forest Service, the Malheur National Wildlife Refuge and the U.S. Bureau of Land Management. Planning is under way in Idaho, Nevada and California.

No official action has yet been taken by Congress to recognize the Desert Trail, or appropriate money for it, but several congressmen and senators are familiar with it and have expressed an interest in its development. Local Forest Service and







Russell Pengelly (right), originator of the Desert Hiking Trail, and Frank Tuning view Oregon's Malheur National Wildlife Refuge, which is one leg of the Trail.

BLM officials have quietly endorsed it, and have begun laying out routes and including plans for the Desert Trail in preparation for the day when it will be a recognized trail.

In Oregon, the Forest Service has proposed a route for the Desert Trail from the Snake River, on the Idaho border, to the lower edge of the Malheur National Forest near Drewsey, Oregon. BLM picks up the trail there and takes it down Malheur River to Malheur Cave, across Diamond Craters and hence to the edge of the Malheur National Wildlife Refuge.

BLM picks up the trail again at the southern boundary of the Refuge, at the base of Steens Mountain. BLM has also officially recognized the Desert Trail by naming it on their maps of the Steens Mountain Recreation Area. From Steens Mountain, the trail drops to the Alvord Desert and then to the Nevada border at Denio.

In Nevada, BLM has provided maps with suggested routes through public land in that state. The proposed Nevada route cuts down from Denio and across Black Rock Desert, bearing east roughly parallel to U.S. Highway 80 to Halleck, where it turns southward along the eastern edge of the Ruby Mountains. Below Ruby Lake, BLM has suggested a swing to the east,

and thence a fair direct southward route to pass east of Las Vegas.

The Desert Trail developers have proposed a route from Ruby Lake in a southwesterly direction that would enter California near Death Valley National Monument.

California desert lovers have picked up the ball and are working on a route through Southern California's Mojave and Colorado Deserts and thence to follow along the Colorado River and its great recreational complex.

One of the most encouraging features of the Desert Trail is that is it proposed to cross areas of western United States that are almost entirely public domain, thus offering the highest potential acceptance without interfering with private lands or private interests. Finding good routes through desert lands has proved relatively easy compared to the difficulties encountered by other trails.

A further exciting advantage over the Pacific Crest Trail and the Appalachian Trail is that many areas will be open to use during almost all seasons of the year, and in fact, some parts of it will be at their best when the mountain trails are closed by snow.

Alternate routes and feeder trails open up tremendous possibilities for hiking through many areas of the desert West at all seasons of the year. For example, when Steens Mountain in Oregon is shrouded in snow, it is possible to hike around its north shoulder and down along the Alvord Desert, or to take a route through Catlow Valley west of Steens.

The Desert Trail offers something for everyone. Along the routes already proposed are places of historical interest, old mining camps, fantastic rockhounding, and a fascinating range of scenic, biological and geographical features.

When the Desert Trail is completed, you will be able to hike, ride horseback, and even use trail bikes on some parts of it, in areas that range from the true deserts of California and Nevada, to the high deserts of Oregon, with alpine regions in between.

Neither the Department of the Interior nor the Department of Agriculture, (Forest Service) have officially endorsed the project. As "Interior" says—there is a great deal of difference between a trail on paper and a trail on the ground. Since the Desert Trail does not fit present legislation calling for trails accessible to urban areas, (in fact it avoids them), and since little public demand presently exists for such a trail, they do not see that much can be done at this time.

You can, of course, hike almost any part of the proposed Desert Trail right now, simply because it is on public land. But you do so strictly on your own, because no money has been appropriated, no water or campgrounds provided, and no trail markers of any kind have been placed. While parts of the trail have been officially recognized on maps, this is largely a form of advance planning by the Forest Service and BLM.

Almost everything done so far in promoting the Desert Trail has been the direct result of action by Russell Pengelly, a Biology teacher at Burns, Oregon, who first conceived the idea for the trail eight years ago, and who has been tireless in promoting it ever since.

The cooperation and help Pengelly has received from local and regional men in the Forest Service and BLM has been gratifying, but the voices of many people need to be heard before the Desert Trail can become a reality. Much work remains ahead, to inform and seek the help of legislators, state officials and government agencies who recognize the importance of this exciting recreational concept.



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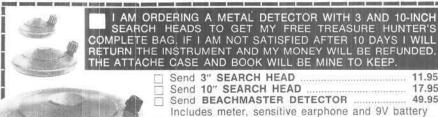
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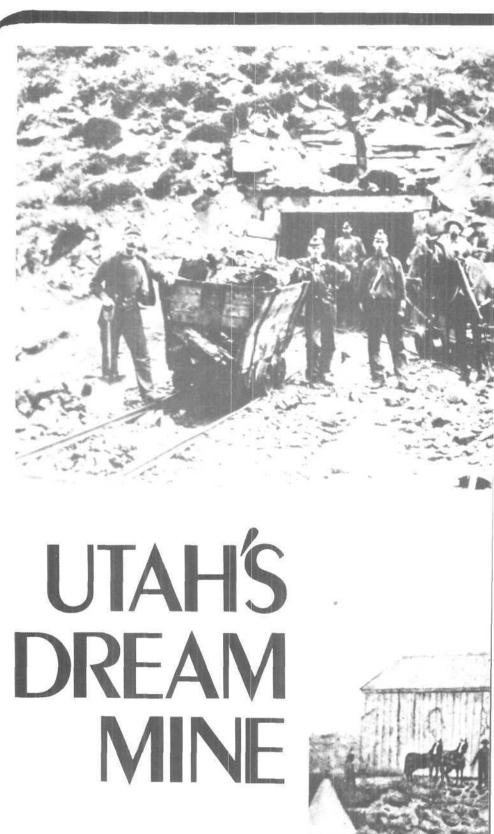
ESTERN MINING history has recorded many strange tales of unusual and remarkable mines. Claims worth millions have been traded for nothing more than a worn out pack mule, or a jug of rot-gut whiskey. The fantastic hoax of Utah's salted diamond mine nearly caused a war with England. "Baby Doe" Tabor spent a lifetime of poverty zealously guarding Colorado's worked out and worthless Matchless Mine.

The deserts of Arizona and New Mexico are said to conceal untold numbers of fabulously rich, but unfortunately lost, Spanish mines. But of all the strange stories told, from tales of Ophir, and Golconda, and El Dorado, none is stranger than the true story of John Koyle's Dream Mine!

John H. Koyle was a dreamer who saw visions, a seer who could prophesy events still far in the future. Even at an early age he often astounded friends in the sleepy little Mormon towns of Utah Valley with the accuracy of his predictions. His prophecies regarding the outcome of elections, of coming disasters, and of other future events were nearly always correct. Businessmen and neighbors sought his advice, and farmers asked his counsel before planting their crops.

So, when during the fall of 1894, Koyle announced that he had dreamed of a place where a great body of precious mineral lay hidden in the Wasatch Mountains above the little settlement of Salem, no one was too surprised, for hadn't his earlier dreams, or visions, come true? Besides, it had been only a few years since Jesse Knight, the Mormon Wizard, discovered his famous Humbug Mine through instructions he claimed to have received during a dream or vision. Knight's Humbug Mine produced a fortune in silver, so why couldn't John Koyle's Dream Mine do the same?

Koyle claimed that during his dream he was visited by a personage who took him deep into the bowels of the earth, as if



George A. Thompson





FOR 50 YEARS, MINERS WORKED WITHOUT PAY AND FINANCIERS INVESTED MANY THOUSANDS OF DOLLARS IN A UTAH MINE BASED ONLY ON THE DREAM OF ONE MAN.
ALTHOUGH JOHN KOYLE MADE MANY SUCCESSFUL PROPHECIES, HIS VISION OF THE RICH MINE DID NOT PAY OFF.

Miners such as those pictured in the old photo (left) worked without pay, so strong was their belief in Koyle's prediction.

The start of the "dream mine" in 1894 (below) in Utah's Wasatch Mountains.



through an opening in the mountain front, and down through the earth's formations to where a king's fortune in rich ore was hidden. Many were anxious to be taken to the place Koyle had seen in his dream. With a group of friends he climbed into the foothills of the Wasatch Range to a place where he staked his claim. It was named the Relief Claim, but few ever knew it by that name, for it was always better known throughout Utah Valley as the Dream Mine.

Although Koyle had no knowledge of mining, he had little trouble finding men to work at his mine, so strongly did they believe in his dream. A shaft was dug into the mountain for 40 feet to where a different rock formation was encountered, just as predicted by Koyle. There the direction of the shaft was changed, and exactly 40 feet further the formation changed again, also just as forseen by Koyle! From that time on work progressed according to instructions the prophet received in his dreams. And, unbelievable as it may sound, especially to anyone familiar with mining methods, mining by dream instructions continued for more than 50 years!

During the more than a half century the Dream Mine was worked, its shaft was sunk more than a thousand feet into the mountain, mostly by farmers or men unskilled at mining. Yet during that entire time, not a pound of ore was found! Whenever the miners faith faltered, Koyle would reassure them, saying the ore would soon be found, just as he had seen it in his dream. The miners kept working without pay, for other predictions made by Koyle kept coming true. Each year saw the shaft dug a little deeper and for every man whose faith failed, there was another to take his place.

The faithful invested their savings in mining tools and equipment, allowing the shaft to be sunk still further into barren rock. Then, in 1914, Koyle startled even his most faithful followers, when he an-



nounced that the 1,385-foot-deep shaft would have to be abandoned after nearly 20 years of work, and a tunnel driven from lower on the mountainside!

Doubt was growing among workers at the Dream Mine, but at about that time it was incorporated as the Koyle Mining Company, and stock was sold to obtain funds to hire experienced miners. By 1929 the new tunnel had been driven over 3,000 feet into the rocky flanks of the Wasatch, and both miners and public officials were becoming openly critical of the entire operation, when one of Koyle's most unusual prophecies came true. This renewed their faith once more.

During the late 1920s the country was experiencing good times, and "prosperity was just around the corner," so when Koyle predicted that the nation was on the verge of a great depression, his prophecy was greeted with ridicule. But after "Black Friday" when the stock market crashed and millions were left penniless and unemployed, few laughed at him.

And when President Hoover was defeated "by a lame man riding a donkey," just as he had prophesied far in advance, the superstitious settlers dared not question his prophesies again. If Koyle said that a great fortune would be found at the Dream Mine, then it would be found, and that was all there was to that!

Work continued at the mine in spite of the depression, with a new 200-foot shaft being sunk, as well as several side drifts and cross cuts. In 1931, a stockholders meeting was held at the mine amid an air of almost religious mysticism. Bugle calls sounded from high on the mountain, while 37 shots were fired out over the valley, one for each year the mine had oper-ated. Koyle made a long speech to more than 1,000 stockholders and curious spectators, telling of the progress being made at the mine, and boasting that after 37 years the company owed no debt. He never mentioned that after 37 years the company also had no ore!

Work at the mine continued. A road was graded up the mountainside to where a home had been built for Koyle. A few stockholders begrudged the cost of the house. When Koyle spent \$43,000 of their money to build a reduction mill for the mine's non-existent ore, they notified Utah State authorities who began an investigation.

After an extensive inspection of the mine by state mining engineers, a report

was submitted stating that there was no evidence of valuable minerals at the Dream Mine, and that ore bearing formations suggesting that mineralization might exist were totally lacking.

At nearly the same time Mormon Church authorities also started an investigation. During the years while Koyle operated the Dream Mine, he had held the title of Bishop in the church, and because of his position it was claimed that he was able to attract widespread investment from church members. Results of the inspection by church-hired mining engineers substantiated findings made by state investigators. There was no ore at the Dream Mine, and nothing to indicate that there ever would be.

In spite of both state and church reports, many determined stockholders continued to support Koyle, and miners who still believed in his predictions kept working. And as if to vindicate their faith, Koyle's phophecies continued to come true with uncanny accuracy. He correctly foresaw the beginning of World War II in advance, and missed its 1945 armistice date by only six days! But although his prophecies continued to come true, they never soothed his troubles with state and church officials and, finally, in 1948 he was excommunicated from church membership.

With his loss of title and prestige in the church, Koyle's fortunes and those of the Dream Mine failed rapidly. By then he was an old man, and in 1949 he died at the age of 84. Work at the mine faltered, and soon stopped altogether. There is no parallel in history where any other mine operated for so long; under such strange circumstances and at such great labor, with so little return. The Dream Mine was operated for more than 50 years, with a record of no debts, no profits, no dividends, and no ore!

But although Koyle's glowing predictions for the Dream Mine never came true, it can't be denied that most of his other prophecies did. He correctly foresaw the election of the Republican Party to national office in 1952, and the victory of the Democrats in 1960. He predicted the present day riots and civil strife as well as the current dollar devaluation. He said the day would come when it would take a bushel of gold to buy a bushel of wheat! Who knows? Maybe there is gold in the Dream Mine. Maybe, if the shaft was dug just a little deeper...

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Photo by Terry Alderman

A Navajo maiden weaving at her toom

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BILL CRAWLEY

As snakes go, Chionactis occipitalis is a pretty little thing, being only some 15 inches long and done tastily in body tones of white or yellow with cross band markings of black or brown. Crowning his head is a dark crescent whose points reach well forward on the sides of his face, and his eyes are large with round pupils. Pretty does as pretty is, too, for Chio is a fine destroyer of insects of all kinds, a fellow who works the sandiest of windblown areas—a terrain so formidable in its sunbaked desolation that it is closed to most desert dwellers.

So well adapted is this little snake to dry sandy conditions that with the coming of irrigation and agriculture he moves out promptly. He wants his desert a dry and barren place, but forever changing with the moods of the wind, a land of blowing, shifting sand and stunted mesquite. For Chio is a shovel-nosed snake, a digger by trade, whose ancestors long ago ventured into the forbidding kingdom of aeolian sand, and successfully made it their home.

In the desert the temperature underground remains fairly constant, and hence it is that there an animal has a better chance of escaping both lethal heat and cold. Also, since the humidity is higher beneath the surface, there is better protection against desiccation and, of course, underground is apt to be a safer place when enemies are around, too. Chio capitalizes on all these advantages by spending hours at a time buried in the sand when conditions upstairs are undesirable.

Subterranean living in loose sand is tricky, not at all like just digging a hole in firm ground where the sides stay up leaving an air-filled chamber. The shifting sand only moves aside, trickling back to fill in once more. Thus the burrowing snake must have special digging equipment to work his way in, and once he's there, with sand all about him, he must be able to keep on breathing. As the surface temperature grows hotter during the day, he must be able to move down through the shifting overburden without excessive effort, which requires a special technique in locomotion. Finally, and most important, since his food is to be had on the surface, the snake has to know somehow when it is time to come out.

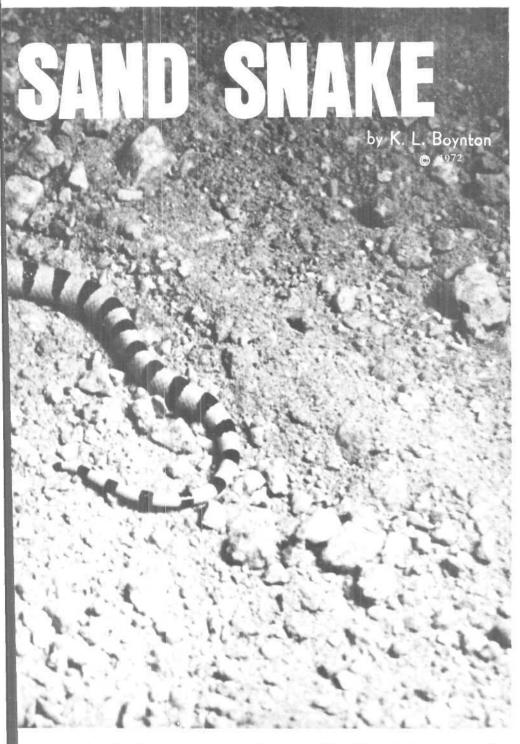
All this seems a lot to ask one little snake to be able to handle, but Chio is just the fellow who can do it.

Zoologist Klauber, intrigued with the



skill and dispatch with which Chio goes into his digging act using a few easy-flowing movements to simply disappear into the sand, had to find out how it is done. The upshot of a lot of hard work showed that here is a snake who uses his head quite literally, for it is the site of a marvelously designed shovel: his snout. Wedgeshape, flattened from top to bottom like a shovel, it is also sharp along the edges and greatly strengthened with bony reinforcements.

He digs with his head, shoving his snout in with sidewise loops of his body. Sand can't get into his mouth, thanks to the countersunk design of his lower jaw. Adjustable valves protect his nostrils and by extending forward also shield the tongue notch in his lower jaw. This notch is an opening through which his tongue can be protruded while his mouth is still closed and must be kept from being clogged up when the snake is below surface if it is to function when he's above ground. (A snake's tongue is ribbon-like, long and very flexible. When quickly run out of this notch into the air it aids greatly in the sense of smell by bringing back chemical news to an especially sensitive spot in the mouth.)



Purchase for the digging thrusts is also provided for in Chio's design as the scales along the sides of his belly are bent sharply at an angle, making a ridged antislip tred. On the other hand, the scales along his back are ivory smooth and highly polished, greatly adding to the ease with which this fellow slips through the sand.

Zoologists Norris and Kavanau, watching the faint movement in the sand as a shovel-nosed toured along under it and, observing that the snake stayed buried for hours, they set up a series of tests that produced new information on what goes

on while Chio is below surface. They found that Chio, thanks to his extra streamlining (there is little or no constriction between his head and body) and his flowing style of locomotion, actually disturbs the overhanging sand very little in burrowing. This is the key to his success; in not packing the sand as he goes, he keeps it light so that the pressure against his body is only minimal. This not only makes it easier for him to move about, it also helps solve his breathing problem, aided further by his style of digging.

Bending his head downward and thrusting it along, the snake gouges out a groove ahead of him as he goes, and this groove serves as an air space. It is kept free of sand by an overhanging scale on his snout. Once well below surface and quiet, the snake shifts from his normal way of abdominal breathing to a fluttering method in his throat, and uses the air in the groove space. He actually requires less oxygen now, for his body tempo slows down.

The throat-fluttering style of breathing keeps the sand from compacting about his body. In abdominal breathing, the sand would tend to rise from underneath to fill in the empty places made by body breathing movements. Noting all this, Norris and Kavanau concluded that both the sinuous locomotion under sand, and the lack of tendency to compact sand, are of adaptive significance, and contribute greatly to the survival of Chio under tough desert conditions.

The big question remained. How does he know when to come out? For, in the field there is a synchronous emergence of these snakes. Everybody seems to come topside at the same time. Working in lab and with field tests these scientists found that buried shovel-nosed snakes are not just camping around waiting for the desert to cool down. They actually become spontaneously active while still below the surface some 24 hours or a little less after the start of the last active period. Then, when the sand temperature above them is right, they come out.

When each snake emerges, finally, his biological clock is reset for 24 hours or a little less again—how, nobody knows—but the result is that it allows the animal to be active at the most favorable time as far as temperature conditions are concerned in the area in which he lives. It works seasonally, since Chio is abroad in the afternoons of spring and fall everyday, but in mid-summer, perhaps not until late at night when the ground temperature finally cools.

Oddly enough, light does not seem to bother these nocturnal snakes, and in fact they can see well in bright light. But they are very adverse to artificial light. Biologist Warren, working near Palm Springs at night, reported that they would never crawl through a beam of light on the ground. Zoologist Klauber's field study showed that Chio likes to hunt in the evening best, between 7 and 10 P.M., and is most active when the temperature

Continued on Page 36

APACHE RECREATION LAND

THE WHITE man is once again invading the land of the Apaches whose ancestors a century ago were among the most feared and warlike of all the southwestern Indian tribes. But this time, instead of fighting to protect their homes from the invaders, the Apaches are welcoming the white man with open arms and greeting him with, "Hon Dah," which means, "be my guest."

And for their 'guests' the Apaches offer more than one and a half million acres of uncrowded scenic timber and rangeland containing 300 miles of the West's best trout streams and 26 recreation lakes.

Several main highways enter the Reser-

vation, the two most scenic being U.S. 60 from Globe which passes through the spectacular Salt River Canyon, and Arizona State 73 from Show Low through Post Office Canyon to Whiteriver.

Something of interest for everyone exists on the Fort Apache Reservation. The Kinishba Ruins are large, well-preserved complexes built by the "Ancient Ones" who lived here long before the Apaches. While shards of pottery, arrowheads and other Indian artifacts cannot be taken from this registered historical landmark, the Apaches permit picking up these items at many other unmarked sites scattered over the Reservation. Besides doing it

yourself, you can examine a professional "dig" being worked by archaeologists. These ruins at Grasshopper make an interesting and educational sidetrip for any summer vacation.

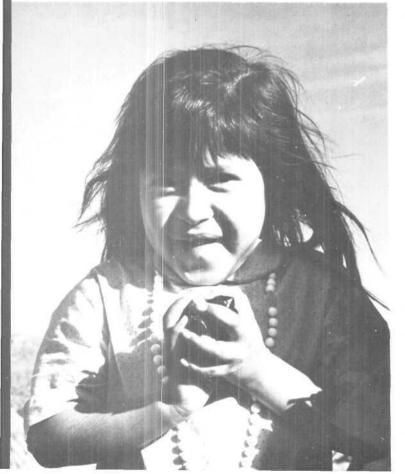
Not interested in Indian rums? Visit the ghost town of Maverick. This lusty lumbering camp stopped operation only a few years back. It has been sealed up with the expectation that in another decade timber will have grown enough in the area to make logging profitable again.

While Maverick can be reached either from the north or south, I suggest that you come in from Fort Apache on the south. The scenery is prettier and the road from the north is hub deep in dust by the middle of summer. Incidentally, the road to Maverick is blocked by a sign, but when I asked an Indian about it, he merely shrugged and said, "Go 'round sign, like everybody else does!", as though the stupidity of a paleface who believed in his own signs was beyond comprehension. This is a trip to take only if you want to see wild country along with deer, turkey and possibly a bear.

A better way to get into Maverick, however, is by the White Mountain Scenic Railroad. One of the last narrow gauge steam locomotive runs in the country, it leaves McNary at 9:30 A.M., returning at 3:00 P.M., all for the price of \$5.95. While not as commercialized as the Durango-Silverton run in Colorado, it is an interesting ride that youngsters and oldsters alike will enjoy as a living experience from the past.

Hunting offers another type of recreation as Fort Apache has some of the best big game hunting left in the country. This area supports one of the heaviest bear concentrations in the world. Though they stay mostly in the back country, unlike the

by William D. Fitzwater



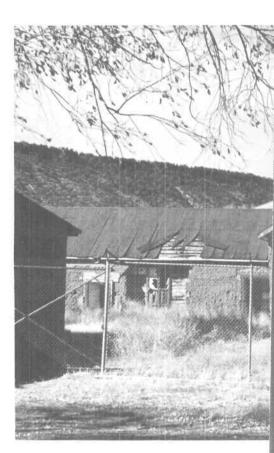
of Apacheland are beautiful, friendly and curious. The Reservation has bundreds of uncrowded camping areas (opposite page) by cool, troutfilled streams. Photos by the author.

The children



Hawley Lake (left) is one of 26 scenic lakes in Arizona's cool White Mountain Recreation Area. An Apache ranger (below) transports trout by horse and mule from a hatchery for planting in one of the many back-country streams.





garbage panhandlers of Yellowstone, they occasionally trouble campers. Recently, a family from Phoenix was awakened by the shaking of their camper. Next morning they found that they had contributed three dozen eggs, two watermelons, seven pounds of bacon, half dozen cans of stew and other staples, two tins of fruit cake, a paper sack of apples and a pound tin of Prince Albert tobacco. When a fat, Yogitype bear was snared in the vicinity by the government trapper a day later for exiling, he was wearing a puzzled look and still spitting tobacco juice. Permits can be obtained to hunt elk, javelina, antelope, waterfowl, dove, quail, coyotes and mountain lion besides bear.



Once a military stronghold,
Fort Apache's adobe walls
(below) are gradually
crumbling from the weather.
One of the sacred Apache
dances (right) can be seen
by the white man
during the annual W hite
Mountain Apache Tribal Fair,
September 2 through 4.



For the photographer there are the Indian women and black-eyed children that wander among the tule wickiups scattered among more modern dwellings. One of the largest of its kind in the West, the annual White Mountain Apache Tribal Fair this year will be held September 2 through 4. It features arts, crafts, rodeos, dances and you might be lucky enough to witness the colorful fertility rites that mark an Indian maid's coming of age.

And then there is old Fort Apache. This famous cavalry post saw troops leave here on the hunt for Geronimo, Nachez and other renegade leaders. It is now a school for Indian children. Many of the original buildings still stand, but have



been converted into private dwellings like General Crook's old headquarters. The barns are falling down and the old cemetery on the hill overlooking the post dreams of a glory long past.

The biggest drawing card on the Reservation is the camping and fishing. Twenty-six high altitude lakes dot the Reservation. There are several improved campgrounds with water, garbage pickup, restrooms and tables, but you are permitted to camp on an almost unlimited variety of sites, over 700 in number. Where to camp and fish depends upon personal preferences.

Those who like solitude where the trout are bigger and dumber will find countless possibilities, though they will probably need four-wheel-drive vehicles. Most of the camping crowd chooses sites by the larger lakes or streams by good roads. Lakes like Hawley, Horseshoe, Cienga, Cyclone, Big and Little Bear are the most popular. Boat docks and facilities are available on many of the lakes but the visitor is also permitted to bring his own boat. However, no motors are allowed on the lakes, so bring oars and

some muscle.

Besides having a valid Arizona fishing license, you need a tribal permit—\$15 for the season or 75¢ for the first day and 50¢ for each additional day. A good supply of finny adversaries is assured for your money by the U.S. Bureau of Sport Fisheries and Wildlife. This agency maintains two fish hatcheries producing 200,000 pounds of trout annually for restocking Reservation waters.

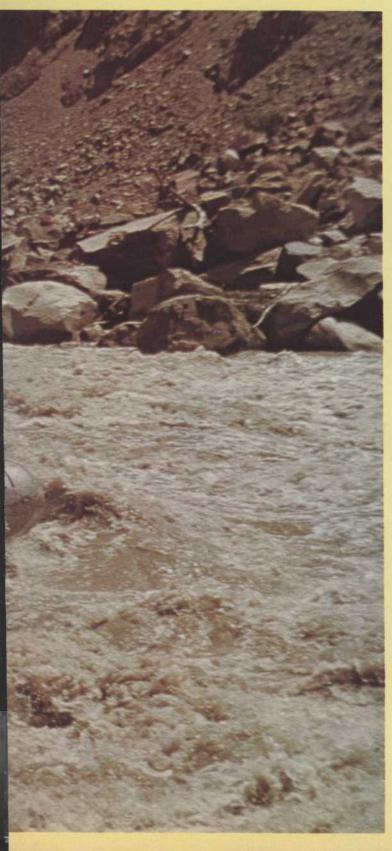
The government fish hatcheries also make an interesting show in themselves. Both are on well-maintained roads—Alchesay is just east of the town of White River and Williams is south of McNary. They are open to visitors and one can see the different stages of growth from egg to pan-size. For a nickel you can buy a handful of fish feed at a vending machine and watch the big ones try to climb out of the water. Unfortunately, you can only drool in anticipation as under no circumstances will they let you wet a line here.

So why not accept the Apache invitation to "Hon Dah," and invade their Reservation which they call, "A Vacation Land to Remember."

RUNNING THE CO



ORADO RAPIDS



by Jack Pepper

Photos by author

HEN I first saw Cataract Canyon of the Colorado River it was from the air as I flew in a small plane over Canyonlands National Park in southern Utah. From several thousand feet above it looked like a thin brown ribbon criss-crossed by tiny streaks of white thread.

My mission at the time was to do an article on Utah's Canyonlands area. The giant, spectacular red sandstone formations I had just photographed made the Colorado River appear insignificant and small by comparison.

Dick Smith, who conducts flights over southern Utah's many scenic areas from his well-equipped operational base at the southern entrance to Canyonlands National Park, was my pilot and informant. Dick combines his prowess as a flyer with an encyclopedic knowledge of Utah amassed during his many years of exploring the wilderness areas.

When I asked him what caused the "tiny white streaks" across the water, he replied, "Those white streaks, as you call them, are some of the most rugged rapids on the entire Colorado. I suggest you see them by boat to see how 'tiny' they are."

This summer I once again saw Cataract Canyon—but it was from a rubber boat and the "tiny white threads" turned out to be a thundering cascade of angry water which seemed to get madder and madder as its path was obstructed by giant boulders which had fallen into the river from the rock formations on each side of the canyon.

As we entered the first rapid I wasn't frightened, I was downright scared.

"What is an old desert rat like me," I thought, "doing in a rubber boat in the middle of the cascading Colorado River when I could be in a safe four-wheel-drive vehicle going over mountain trails or being stuck in the sand. At least, I could get out and walk."



Every morning at dawn the chow hounds sipped coffee and watched Bosco and Russ prepare breakfast of eggs, bacon, potatoes and pancakes.



After breakfast everyone helps load the boats (above) which were then covered with tarpaulin and securely lashed down with ropes in preparation for the day's adventure. Deftly using his 20-horse-power Mercury outboard, Bosco (below) maneuvers his boat through one of the lesser rapids. Life jackets are worn at all times.



But within a few minutes, as our boatman, Russell Sullivan, expertly piloted the rubber craft of Hatch River Expeditions past the boulders and headed it into the giant waves—the spray of which cooled my sweating mind and body—my initial fear changed to exhilaration. By the time we had entered the third rapid, this desert rat had turned into a river rat.

From the start of Cataract Canyon, just below the confluence of the Green and Colorado Rivers, the rushing water falls 405 feet in 50 miles—an average rate of eight feet per mile—until it reaches the quiet waters of Lake Powell. Within these 50 miles there are 32 rapids, all of which are separated by fairly calm water.

Before the completion of Glen Canyon Dam and the resultant formation of Lake Powell, whose waters have inundated the upper part of the Colorado River, there were more hazardous rapids but today they are under the peaceful waters of the lake.

Lake Powell is named after Major John Wesley Powell, a United States Army engineer and the first man to scientifically explore the Colorado River and its Cataract Canyon. He started his historic river journey—not knowing what lay ahead—with nine men and four wooden boats from Green River, Wyoming on May 24, 1869.

Three months later, after suffering extreme privation and near starvation, but still accomplishing their mission of chartering the hitherto unknown Colorado and going through 62 rapids, the group emerged from the river at the confluence of the Colorado and Rio Virgin Rivers in Nevada (now under the waters of Lake Mead).

Ironically, the only lives lost were those of two men who, not knowing safety was only a day ahead, abandoned the expedition and climbed out of the river canyon—only to be murdered by Indians who mistakenly took them for marauders.

One hundred and three years after Powell's epic journey the Colorado has been explored and tamed by man. Two major dams—Glen Canyon and Hoover—have been built and the only major rapids are those of Cataract Canyon and the ones from Marble Canyon, below Lake Powell, through Grand Canyon to Lake Mead.

And, unlike the Powell expedition, running the rapids of the Colorado River—and other "wild rivers of the West"—is really safer than driving an automobile on the freeway. There are no oncoming cars going 70 miles per hour!

My trip through Cataract Canyon started at Green River, Utah where Enid C. Howard, Desert Magazine's Utah Associate Editor, and I joined a group of geologists headed by Don L. Baars, Professor of Geology, Ft. Lewis College, Durango, Colorado.

There were 16 of us, including the head

boatsman, Gary "Bosco" Bosler, of Vernal, Utah, and the second boatsman, Russell Sullivan, of Los Alamos, New Mexico. Bosco and Russ have been with Hatch River Expeditions for several years.

Pioneer river runners with more than 30 years experience. Ted and Don Hatch are licensed to run most of the "wild rivers" in the United States. Since many of the rivers go through national parks, both Federal and state licenses are required. Also, today the running of rivers has become so popular, a quota has been placed on each river.

Enid and I were fortunate that Ted Hatch had invited us to go with this group. We not only had a thrilling ride, but had a three-day geological field trip.

Head geologist Don L. Baars, or "Doc" as he is called, and C. M. Molenaar, are co-authors of **Geology of Canyonlands and Cataract Canyon**. Doc's knowledge of the geology of the area is both academic and practical as he has conducted many field trips and is one of the few men who have, more than once, traveled the entire length of the Colorado River by boat.

For the Cataract Canyon trips, the Hatch Brothers use a type of boat originally designed for the U.S. Army as pontoons for bridges in Korea and which they have converted for river running. They are made of cotton-impregnated neoprene and are 33 feet long and eight feet wide. The inflated sides are in sections so, in case of puncture, only a small amount of air is lost. Patching requires only a half hour and the boats are inflated (and deflated) by commercial vacuum cleaners run by gasoline powered motors, one of which is carried on each boat.

Although each boat has giant-size oars in case of emergency, they are powered—or rather directed—by 20-horse-power Mercury outboards.

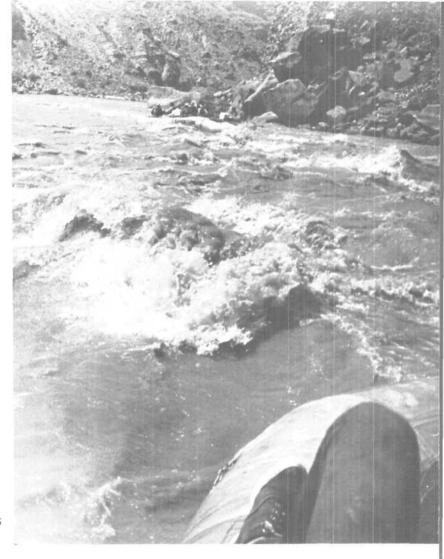
The trip from Green River, Utah—not to be confused with Green River, Wyoming—to Hite Marina at the northern end of Lake Powell, is approximately 170 miles and usually takes four days.

For 117 of those miles the Green River flows quietly through verdant valleys and then through geological formations whose cliffs get higher and higher until, at the confluence of the Green and Colorado Rivers, there are sheer vertical escarpments.

The lower section of the Green River is in the Canyonlands National Park area which I had been covering when I first saw from the air the two rivers and Cataract Canyon. (See Desert, May '71.)

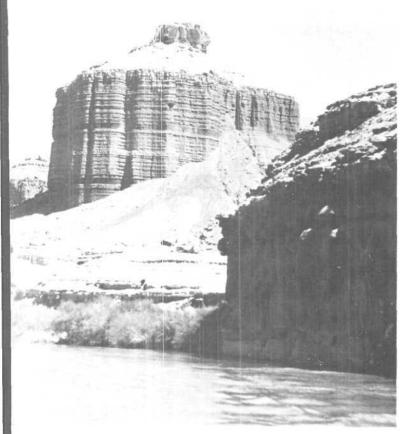
This was my second excursion down this placid section of the Green River. A week prior to this trip I had attended a press preview of the Friendship Cruise which is held anually on Memorial Day weekends.

An average of 700 power boats from all parts of the United States participate in the two-day event sponsored by civic groups from Moab, Utah.



A second after author took this photograph the wave in the foreground—which looks small—completely engulfed the boat as Russ swung it around the boulder behind the wave. The wave was a "real douser" (below) so the "river rats" stopped at the bottom of the falls and bailed the boat out, dried their gear and prepared for the next rapids.





One of the famous landmarks on the Green River is Dellenbaugh's Butte which Major Powell named after a 17-year-old artist in his crew in 1871.

Leaving Green River, the power boats cruise downstream to the confluence of the Green and Colorado Rivers and then up the Colorado to Moab.

It is below the confluence the rapids of Cataract Canyon begin. Only licensed river runners in rubber boats are allowed through Cataract. Power boats would be broken to pieces in the first rapid.

As Bosco and Russ loaded our gear, Baars told me the town of Green River was founded in 1878, but as early as the 1700s the Spanish had crossed the river here en route from Santa Fe, New Mexico to California.

We left Green River at 9 A.M. and for the next two days drifted down the peaceful river. Most of the first day, the river winds through flat grass lands, but the farther south it flows the desert lands give way to hills and finally to perpendicular cliffs rising hundreds of feet above the water.

It is these cliffs, tributary canyons and changing strata that first fascinated Major Powell and today are a geologist's delight since a trip downriver is a "journey into geological time."

During the first two days we stopped to examine the geological features of canyons such as Labyrinth and Stillwater, old uranium mines and the ruins of prehistoric Indians. Many of the pueblo structures are located high above the water and today are inaccessible. It is a mystery how the aborigines were able to scale the cliffs.

The first night we camped on a sandy bank approximately 50 miles from our departure point.



Formations such as this make the trip a geologist's delight since it is a "journey back through geological time."

As we found soft spots to unroll our sleeping bags and then swam in the cool water, Russ and Bosco built a fire and prepared supper.

I had expected spartan fare. When Bosco shouted "chow time" I found we had delicious soup, steak, hash brown potatoes, corn and, for dessert, chocolate pudding. The following meals were just as sumptuous.

At home I have toast and coffee for breakfast. During the river trip I had two helpings of fruit, eggs, pancakes, bacon and coffee.

We arrived at the confluence of the Green and Colorado Rivers on the afternoon of the second day. The walls here rise 1,200 feet above the river and the actual summit is at an elevation of 5,000 feet. Powell (who had only one arm) and his party climbed out of the river here in 1871 into what they called "Rock Forest." Today it is called the Maze and is part of Canyonlands National Park.

Two miles below the confluence I heard what sounded like a fast moving, heavily loaded freight train. It was the noise of the first rapid of Cataract Canyon. We made camp just above it on a site where Major Powell had stopped more than 100 years before.

After helping to unload the boats, we "first-timers" hiked downstream about a half mile for a look at our first rapid. The angry, churning water cascaded over giant boulders which seemed to form an impassable barrier across the river.

I returned to camp and asked Baars if it was

Continued on Page 35

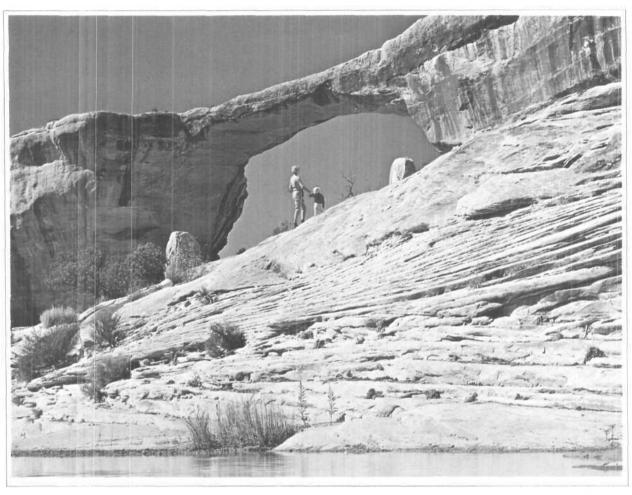


Photo by David Muench

Septober Quite possibly the nicest time to vacation in Canyonlands, U.S.A.

VACATIONING in southeastern Utah is great any time of the year. But the time that's becoming a favorite with many visitors is Septober, that delightful period from Labor Day to Halloween. The days are pleasantly warm and clear, the nights crisp and brilliant.

Unlike many National Parks areas, Canyonlands is never crowded. And it's even less so in September and October. There are plenty of modern accommodations, restaurants and camping facilities throughout the region.

You will find as much to do as to see in Canyonlands, U.S.A. Go exploring in the hundreds of Indian ruins. Go boating or rafting on the mighty rivers. Go water skiing or fishing at Lake Powell, or camp along the 1,800 mile shoreline. Bring your 4-wheel drive vehicle or trail bike and enjoy the spectacular back country. Or just enjoy the sights from your car along modern highways. Whatever you want to do, Septober is the perfect time to do it.

There is a complete and colorful Canyonlands Vacation Kit awaiting you. Just drop us a note today and we'll send you one. Free.

Canyonlands, U.S.A.

88 North Main Street Monticello, Utah 84534 NOULATING LIKE waves on a sea of alluvium, the Broken Hills occupy a 170-mile segment of Nevada's high desert country in the southeast corner of Churchill County It is a sparsely settled region used mainly as cattle range in years of favorable rainfall. Though bleak, barren and isolated, the Broken Hills have attained fame as the producer of outstanding petrified wood.

This fine cutting material is generally referred to as "Gabb's Wood"—a misnomer, probably used by early collectors to keep the exact location unknown. Several deposits occur in the Broken Hills but two locales—the Green Wood Area and Boulder Hill—are easy to reach and still supply excellent material for collectors willing to do some digging.

The two deposits lie a little over a mile apart and are located along Nevada State 23, approximately 14 miles south of U.S. 50. (See map for detailed mileages.) Fences line both side of the highway, but gates have been conveniently provided for access to the back country. CLOSE ALL GATES, AS THEY ARE FOR THE PROTECTION OF RANGE CATTLE. If left open and any cattle are injured on the highway, you may find them locked the next time you want to collect petrified wood.

Since there are few landmarks in this region and speedometers often vary, it would probably be easiest to first locate Boulder Hill, then the Green Wood turnoff. The Hill nearly touches the highway and has a large, rounded boulder perched on its summit. (See photo.) A short, dirt road leads through a gate to a good camping area. A jeep trail ascends the hill to the first of several diggings. It is only a short, steep hike for those without 4WD or trail bikes.

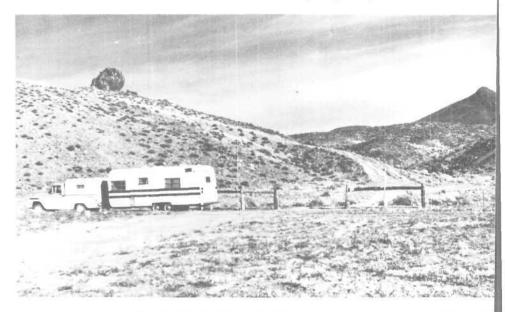
Three-tenths of a mile north of the Hill, another dirt road (not easily seen) leaves the highway, climbs a road cut, goes through a gate, then follows a steep ridge to several diggings. This is all considered part of the Boulder Hill collecting area. This road is not advisable for trailers.

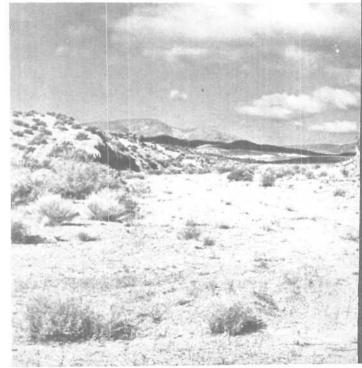
Opalized, agatized and silicified wood are found in the Boulder Hill deposits where one log may be replaced by all three materials. The opalized wood seems to be the most sought after. It is beautiful with chocolate browns in combination with bright yellow and stark white; silver-grey centers streaked with jet black and encircled with warm brown and white. There



WOOD

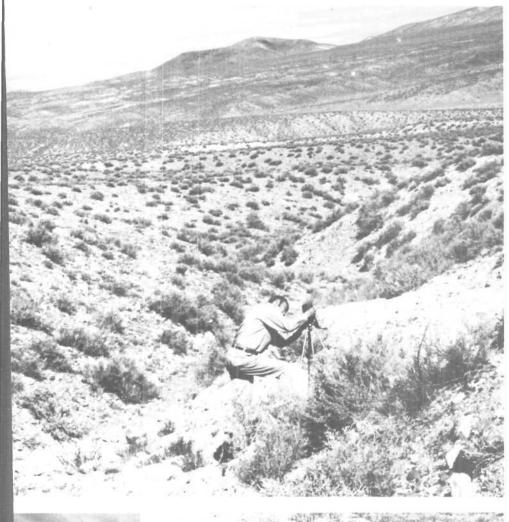
Headframe of San Carlos Mine (left) at the old camp on Quartz Mountain. Rounde boulder on top of Boulder Hill (below) landmark for petrified wood area. A good camping area is on right of photo and 4W trail goes to diggings. Trail leading to diggings in the Green Wood locale (right where large log was found.





Faint road east of
Quartz Mountain
(right) leads to
obsidianite field
in dark volcanic hills.
Digging is necessary
(opposite page) to
uncover petrified
wood.

IN BROKEN HILLS



by Mary Frances Strong
Photos by
Jerry Strong

are just too many color combinations to describe here, all of which are very attractive.

Generally, chips will be found around the campsite, which will give you an idea of what to look for if you are unfamiliar with the wood from this area. Many large logs have been located here and there is no doubt in my mind that many more are still undiscovered.

The Green Wood deposit is a little over a mile north of Boulder Hill. From State 23, follow the dirt road east through a gate, then up a narrow, winding wash for nearly a mile. Cars and pickups can easily negotiate the road unless there has been a flash flood. It is not advisable for trailers.

The short distance up the wash required us more than a half-hour. We were stopping constantly to pick up small pieces of lovely black and white opalized wood.

The green wood is also opalized and simply beautiful as you will see from the chips in the wash and around the diggings. Hopefully, they have not all been picked up by tumbling enthusiasts. There was evidence that a log had recently been removed when we were there last November. A steel probe would be very useful in helping to locate buried logs when there is no surface evidence.

Middlegate Station—a bar and cafe south of the junction of Highways 50 and 23, is the nearest source of gasoline. It is operated by a very friendly couple—the Vance Middaughs. Several complete trailer hookups are also available for a nominal fee. Take a look at the large section from a petrified log in their yard, "They come big in them thar hills!"

Broken Hills is an interesting region to explore. The skeletons of two old ghost



towns lie bleaching in the desert sun while the headframes of two once-productive mines guard the ores left behind. An obsidianite field lies up a lonely wash among volcanic hills and a myriad of jeep trails offer good exploring for back-country enthusiasts.

We began our explorations via the Broken Hills-Quartz Mountain Road, three miles south of Boulder Hill on State 23. This is a good, graded dirt road that leads easterly to the old towns for which it was named.

As we drove along we could see and

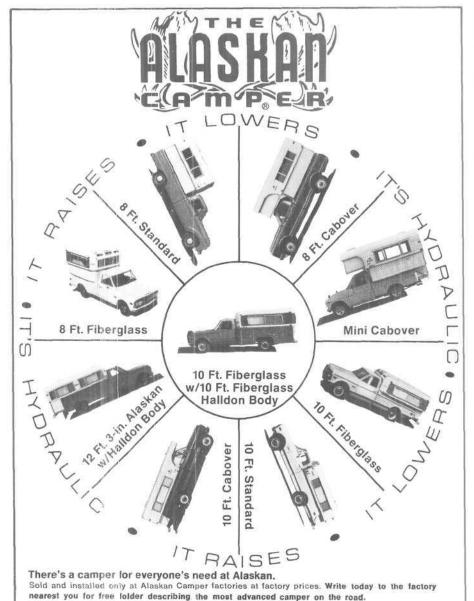
feel the aridness of the country. It seemed impossible that such land could provide forage for cattle. No doubt occasional winter storms bring life-giving moisture, as well as summer thundershowers. When this happens, desert land can turn green and become a wildflower garden in a very short time.

Our first stop was at a lonely hillside grave where a wrought iron fence protected the site and a simple marker stated "Matt Costello, 1866-1926." Matt found his pot-of-gold at Broken Hills after spending his life prospecting with "luck" that provided merely bed and beans. He eventually located a promising claim and sold out with plans to spend his money enjoying life. This was not to be. Perhaps the excitement of finally making it proved too much, as Matt was found dead before he had a chance to even spend a penny. He was buried here in the country he loved by his friends. They felt he would like to be near his big strike.

A mile and a half east of Matt's last resting place, the road climbed a saddle in the hills. Ahead, along a wide wash, were the ruins of Broken Hills. On the left, tracks led a short distance north to the mine which had given life and brought death to the old town.

It was in 1913 that prospectors James Stratford and Joseph Arthur discovered the vein of rich silver sulphides associated with lead and gold. As was to be expected, this news brought a rush of hopeful miners and a settlement soon developed.

There were the usual saloons and bawdy houses but Broken Hills was, more or less, a sedate town. There were many homes, several businesses, school, post of-



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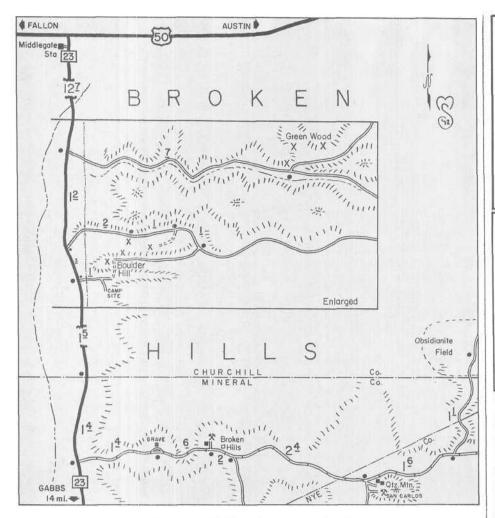
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fice and hotel. Everything needed for comfortable living, except water. Every drop had to be hauled in at considerable expense. "Spare the water" must have been the housewives daily motto.

The original discovery became the main producer and Stratford and Arthur wrested some \$70,000 from their mine before selling out to the Broken Hills Silver Corporation in 1920. Problems developed within the new company and they only delivered one small ore shipment. The camp began to decline but a strike at nearby Quartz Mountain in 1925 brought on a temporary boom. A tent city arose at the new diggings when hundreds of people began to arrive. A townsite was laid out but it was all over by 1927. Mining can be a fickle mistress!

Ore was produced from the Broken Hills District during the next decade but when the great depression hit, even the die-hards began to drift away. By the mid-1900s, Broken Hills had joined the ranks of Nevada Ghost Towns.

Time has not dealt kindly with the old town, though a stalwart headframe gallantly stands guard on a hill above the site. We counted seven buildings in various stages of collapse. Evidence of many more were noted throughout the area where bottle and relic collectors had been busy digging for loot.

Farther east, little remains of Quartz Mountain except several buildings at the San Carlos Mine. This area, and the Broken Hills Mine are not abandoned, just idle. Please do not disturb the buildings or mine equipment.

A mile and a half east of Quartz Mountain, a typical desert road (two-tracks) heads northerly up a wash. Watch for a field of obsidianites a mile from the main graded road.

There is always a feeling of nostalgia when poking around old ghost towns and mining camps. One wonders how these plucky pioneers managed without the "101 things" we consider absolutely essential today. They followed their dreams and, when the bubbles burst, picked up the pieces and looked toward new horizons. They were not confined to routine jobs nor burdened with too many possessions. "Free Spirits" carried these men and women of the good old days and they shared a belief in the pot-of-gold at the end of the rainbow. I envy them!

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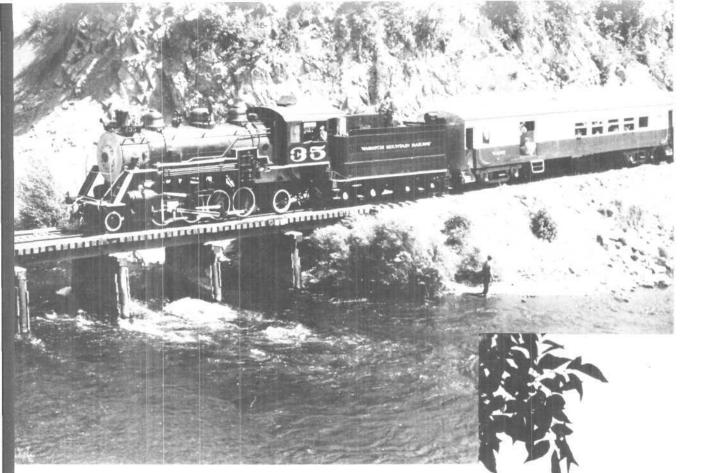
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Big Engine 35, carrying festive passengers, crosses Wildwood Bridge (above) in Provo Canyon. Waiting to board the train at Heber City, Utah, passengers affectionately call the Wasatch Mountain Railway, the Heber Creeper.

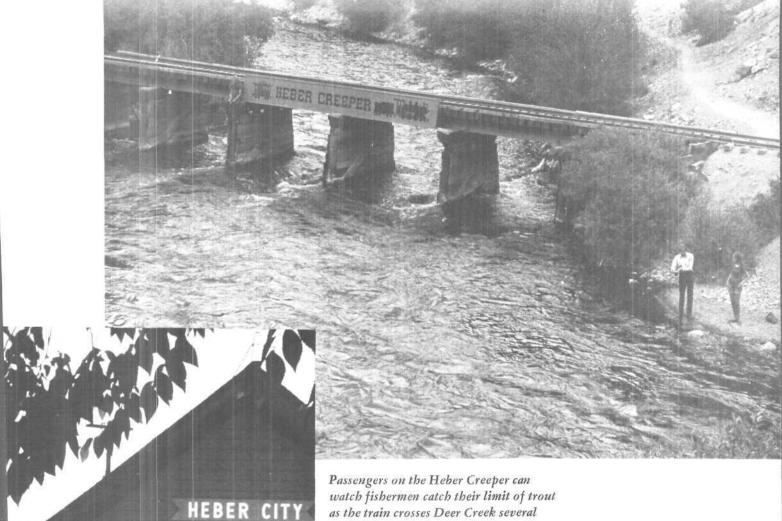


UTAH'S HEE

The Shrill whistle of the Heber Creeper echoes across Heber Valley. The station master at the train depot scurries around, checking last minute details. Excited children, scrambling aboard the giant iron-horse cringe every time the whistle blows. With a puff of steam spewing into the air and a slow chug and puff, Big Engine No. 35 of the Wasatch Mountain Railway pulls its load of passenger

cars laden with festive tourists on another scenic jaunt down Provo Canyon.

Railroading is still very much alive in this section of Utah. The Wasatch Mountain Railway, more popularly known as the Heber Creeper, makes a three-and-a-half hour fun trip down Provo Canyon regularly during summer months. The 37-mile, round trip journey winds across pastoral Heber Valley, around Deer Creek Reservoir and through Provo Canyon to majestic Bridal Veil Falls. In the spring the greens are fresh and delicate, in the summer the colors are rich and deep. The fall—the crown of it all—boasts mountains blazoned with scarlets, reds, yellows and oranges. The panoramic view changes constantly. Passengers enjoy an afternoon of variety with every turn of the wheel clacking along the tracks.



as the train crosses Deer Creek several times along the 37-mile scenic route.

Ьу Carol-Ann Fuller

On the straightaway the engineer can give her the full throttle for a maximum 15 to 20 mph trip. However, uphill, chugging and puffing against a two-point grade in some places the run is more of a walk.

Old Engine No. 35—the massive steam locomotive - chugs up and down the tracks over the eastern portion, now abandoned, of the Denver and Rio Grande Western's Provo Canyon Branch built to serve the once bustling sheep center of the Heber Valley. The mining industry, at one time, also used these rails for transporting of their goods to and from this picturesque valley.

Standby power for the daily run is available from an ex-Union Pacific Engine No. 618. This 1907 Baldwin, after being in use for a number of years in the Salt Lake railroad yards, had been on display in the Utah State Fairgrounds at Salt Lake City since the late 1950s. Through the combined efforts of the Wasatch Railway Museum and the National Railway Historical Society, it was moved to Heber for this purpose.

Making up the train there are closed coaches, open air units and some with canopies. The open air cars are the most



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Beautiful Bridal Veil Falls is at the end of the line. Passengers here can take a tramway ride past the falls to the summit where there is a magnificent canyon view.

fun and equipped with benches running the full length of the flat-bed type car. This design allows the passengers to really feel the fresh mountain air and smell the sage. It is advisable to dress warmly even in mid-summer because there is a cool breeze created as you move down the tracks.

There are no strangers aboard since a friendly, relaxed atmosphere prevails. Passengers carry box lunches, goodies, soda pop. In the rear car there is also a concession stand. Dressed in typical railroad garb of striped bib-overalls, caps and red kerchiefs, there are several young men and women roving about the train. Adding color and lending authenticity they serve as hostesses, guides and trouble shooters. Over a loud speaker these "railroaders" point out sights and tell tales of interest. Occasionally there is a guitar-strumming singer aboard, stirring up interest in the old tunes such as "Zak, the Engineer," "I've Been Working on the Railroad" and "Home on the Range."

Just before the Heber Creeper arrives at

the end of the line at Bridal Veil Falls, that magnificent double cataract that tumbles down Provo Canyon, it stops—seemingly in the middle of no place. The cars jerk. Passengers immediately think there has been trouble. A buzz of concern runs the length of the train.

The engine is uncoupled and pulls around on a siding, bypasses the string of cars with wondering passengers hanging over the railings. Hooking on to the other end it now pushes the train on into Bridal Veil Falls station. This is done at this point because at the Falls there is no room for a turn around and because the grade is so steep the engine needs to be on the pulling rather than the pushing end.

The Heber Creeper made its first tourist run along the Iron Horse Trail through the Alps of Utah on July 10, 1971. The massive steam engine is gathering friends like it gathers steam for an uphill pull. Tourists appreciate the chance for just one more train ride—before the end of this historic era.

CATARACT CANYON

Continued from Page 26

still possible to follow in Powell's footsteps and climb out of the canyon.

He laughed and said, "Don't worry, this rapid is one of the smallest and tamest we will hit." The word "hit" wasn't much comfort.

The next morning Bosco and Russ put the gear in waterproof bags, covered them with tarpaulin and lashed ropes across the boats. During the running of the rapids we sat on the tarpaulin and held on to the ropes.

Since I wanted to take pictures of the other boat running the rapid from shore, we were the first through. As the boat entered the rapid it seemed to bend in all directions and at times shoot completely out of the water. I was sure we were going to hit a giant boulder head-on and was ready to leap over the side. But Russ expertly maneuvered the boat around the rocks and in a few minutes we were in calm water.

After resting a minute to calm my nerves, I climbed on a boulder and shot pictures of the other boat as it repeated our first ride. From shore I could see that the boat did bend as it went up and under the waves which at times completely covered the craft.

It was the start of an adventure that can only be realized by a first-hand experience. As we passed through each rapid, I gained confidence and by the third, I was holding on the ropes with one hand and shooting pictures with my other—and shouting like a wild cowboy on a bucking bronco.

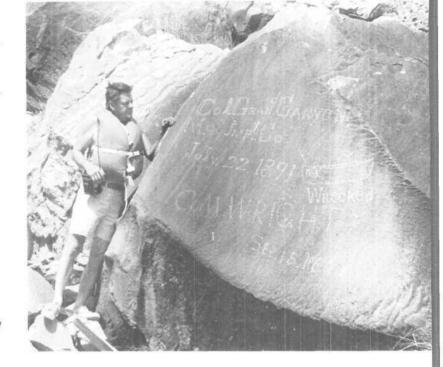
After two of the worst rapids—by this time I was calling them the best because they gave us a more thrilling ride—we had to stop and bail water out of the boats.

The third night we camped above the final rapid for below it are the calm waters of Lake Powell and sheer cliffs prevented us from finding a camping spot.

As I listened to the water rushing over the rocks on our final night I fell asleep, wishing our adventure had only just begun. I had become a river rat in every sense of the word.

During my four-day journey down the Green and Colorado Rivers, I found the tranquil peace of smooth waters, the excitement of running one of the few rapids left in the West, learned how insignificant is man in relation to the millions of years it took to create the majestic geological formations through which we passed—and became one with the universe as I slept out under the star-studded skies.

Next time I fly over that little brown ribbon with the white threads, I'll remember a four-day adventure which can only be found in the wilderness areas of the West. You, too, will find adventure and an unforgetable experience by running one of the "wild rivers" of the West.



Author examines carving on rock made by C. W. Wright in 1891 after one of his boats was wrecked. There are several such tragic signs along the rapids made by others.



This is not the way to run the river. This raft (above) of empty cans was found below one rapid. No one in author's party knew how it got there. This is the way to run the rapids and come out safely. Headed for Hite Marina (below) and the end of the journey, the adventurers relax as boats travel over the calm waters of Lake Powell.



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SHOVEL-NOSED SAND SNAKE

Continued from Page 17

ranges between 70 and 90 degrees. Wind does not discourage him.

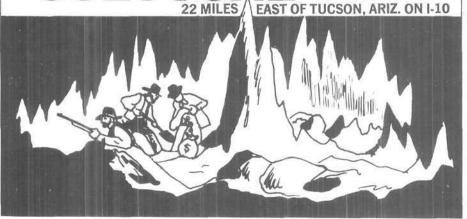
Insects are the main items on the bill of fare, including beetles, ants and the pupas of various moths. Spiders are downed with gusto. Since snakes do not chew or tear food, but swallow it entirely, the problem is to keep prey from getting away in the process. It is solved neatly by the construction of snake jaws. These are made in sections, any of which can remain stationary, while others move. Therefore the teeth in one jaw section keep a tight hold while the prey is inched down the throat by other jaw sections moving in rotation. A snake can breathe while swallowing, incidentally, because the opening in his windpipe is far forward between his jaws just behind the sheath for his slender tongue.

All this is a very good deal for Chio when dining on scorpions for he dearly loves such a tasty snack and can handle fairly good-sized and powerful ones. Making a quick dart, he grabs the scorpion near the base of its stinger, backs into the sand dragging it with him, thus using the reverse sand pressure to help get the best purchase. Then out into the open again to begin the leisurely and sure swallowing technique, snake style. During the process, the scorpion is bent into a U-shape with the business end of the stinger pointing at its own body. The finale being only the claws and stinger left which are brought firmly together by Chio's jaws into a neat compact bundle. Chio's elastic throat opens up, and down it goes.

Chio himself has plenty of enemies ranging from owls to covotes, but mainly in the bigger snake department - king snakes, rosy boas, gopher snakes, coach whips venturing further into the sandy desert at night from their usual stamping ground along the edge where living is easier. So a shovel-nose has to look out for these in going about his business. Chio forages from one creosote bush to another, crossing and recrossing his own tracks, but not wandering far afield. Surprised by human investigators. Chio heads for a bush and climbs up into its protective tangle, his markings blending with the creosote's light and dark nodes and internodes, an odd reaction for a snake who could, if he wanted to, dig and disappear so quickly. Cornered, he coils and strikes openmouthed, a tactic which might scare off small animals, his teeth in reality being not much good for defense as they are so very small.

More needs to be known about this most interesting little snake. Why, for example, does he stop short of complete burial many times, leaving one centimeter of his tail sticking out, and stay this way for hours? Scientists observe this, ponder, and have opinions. But up until now, only Chio knows the real reason.

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Calendar of Western Events

This column is a public service and there is no charge for listing your event or meeting—so take advantage of the space by sendin your announcement. However, we must receive the information at least three months prior to the event. Be certain to furnish complete details.

AUGUST 31-SEPTEMBER 4, 16TH ANNUAL GEM SHOW of the Antelope Valley Gem and Mineral Club held in conjunction with the 31st Annual Antelope Valley Fair and Alfalfa Festival, Lancaster, California, Gems, minerals, fossils, Indian artifacts, bottles. Co-hosted by Palmdale Gem and Mineral Clubs. Admission to grounds, 75 cents. Write P. O. Box 69, Lancaster, Calif. 93534.

SEPTEMBER 2-4, ANNUAL NORTHWEST FEDERATION OF MINERALOGICAL SOCIETIES Convention and Show. Multnomath County Exposition Center, North Portland, Oregon. Sponsored by Oregon Agate & Mineral Society. Write Norman Nicholson, 514 S. W. Lobelia. Portland, Oregon 97219.

SEPTEMBER 2-4, WHITE MOUNTAIN APACHE TRIBAL FAIR, Apache Indian Reservation, Whiteriver, Arizona, Outstanding display of Indian art and crafts, rodeo, dances, etc. See article in this issue.

SEPTEMBER 9 & 10, ANNUAL GEMBOREE sponsored by the Santa Maria Gem & Mineral Society Fairgrounds, Santa Maria, Calif. Admission and parking free. Write Billy Joyall, 1617 North Lynne Dr., Santa Maria, CA 93453.

SEPTEMBER 8-9, 2ND ANNUAL AMERICAN INDIAN SHOW & SALE, Frontier Hotel, Las Vegas, Nevada. Display and sale of Indian crafts and allied crafts. Traders, collectors, exhibitors and barterers. Write Florine Lawlor, American Indian Show, Frontier Hotel, Las Vegas, Nevada 89109.

SEPTEMBER 9, SHOWDOWN AT THE HACIENDA, sponsored by the South Bay Bottle Club, Hacienda Hosel. 125 N. Sepulveda, El Segundo, Calif. Auction, sale tables, door prizes. Write Gay Baron, 1800 Faymont, Manhattan Beach, California.

SEPTEMBER 10, TREASURE HUN'T sponsored by the Treasure Hunters Club of Central

California, Restricted entries. For information write to P. O. Box 5283, Walnut Creek, Calif. 94596

SEPTEMBER 25 & 24, TWENTY-FIFTH ANNUAL COLORADO RIVER MARA-THON BOAT RACES from Needles (Calif.) Jellystone Park Marina for 100 miles. Also local racing events. Write Preston Gleason, 412 C. Street, Needles, Calif., 92363.

OCTOBER 7 & 8, WONDERFUL WORLD OF GEMS sponsored by the East Bay Mineral Society, Inc., Scottish Rite Temple, 1547 Lakeside Dr., Oakland, Calif. Write P.O Box 1196, Oakland, Calif. 94604

OCTOBER 7 & 8, ANNUAL HARVEST OF GEMS sponsored by the Centinela Valley Gem & Mineral Club, Hawthorne, Memorial Center, Prairie and El Segundo Blvds., Hawthorne, Calif. Admission and parking free. Write Charles Bawolski, 407 East Hilldale St., Inglewood, Calif. 90302.

OCTOBER 7 & 8, GEMARRIFIC SHOW, 16th annual event sponsored by the South Gate Mineral and Lapidary Club, South Gate Park Auditorium, 4900 Southern Ave., South Gate, Calif. Admission and parking free. Write Amber Hull, 9838 Elizabeth St., South Gate, Calif. 90280.

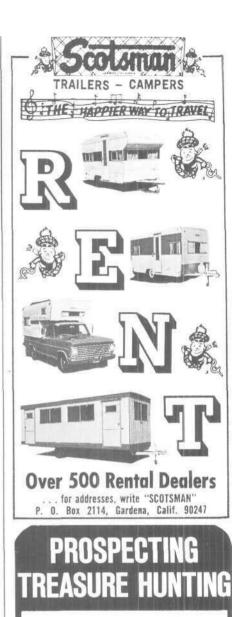
OCTOBER 8, ROCK SWAP & FUN DAY, Farmer's Free Market, 30th & S Streets, Sacramento, Calif. Free booths for swappers, tailgaters welcome. Write Sacramento 'Diggers Mineral Society, 5250 38th Ave., Sacramento, Calif. 95824.

OCTOBER 20-23, ANNUAL TECOPA-SHO-SHONE ARMAGOSA ROCKHOUND DAYS, Tecopa, Calif. Parade, street dancing, miner's drilling contest, etc. Write Lloyd Miller, Box 24 Tecopa, Calif. 92389.

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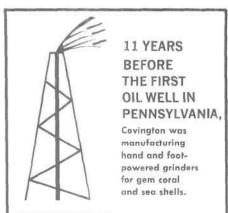
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DIAMOND: The Most Remarkable Mineral

PRACTICALLY EVERYONE knows what a diamond is. Most American women have at least one gem as part of their jewelry. Many men also wear diamonds. It would be expected that this familiarity would be accompanied by a good knowledge of the mineral and the gems it produces, but surprisingly, very few people know much about the physical and optical properties of diamond.

Diamond is one of the simplest of minerals, made entirely of the single element carbon. It forms crystals in the system based upon the cube, which is the simplest of all crystal systems. At this point, simplicity falls aside, and we find the other characters to be extreme or complex.

The makeup of diamond, that of closely packed carbon atoms, sets the stage for a number of interesting characteristics. The densely packed atoms resist wear, making diamond the hardest of all minerals. On the other hand, some of these layers of atoms have weak bonds, thus a diamond can easily split along certain lines. This makes it a brittle mineral.

It is possible to split a diamond with ease; a sharp blow to a gem in a ring may take off a chip. This splitting, called cleavage, is used by the diamond cutter to reduce the size of pieces in preparation for cutting gems. This case of splitting is vir-

tually unknown by most people. All they have heard of is its extreme hardness.

For many people, it is difficult to differentiate between hardness and brittleness. Hardness (and its opposite, softness) is a measure of a resistance to scratching. Brittleness (and its opposite, toughness) is a measure of how well it holds together when it is struck a sharp blow. Most diamonds are rubbed on various everyday objects, thus they do not get scratched. Few diamonds in jewelry are struck a hard blow, thus most never know it is brittle.

An old tale (commonly believed today) tells of a test for diamond—strike it with a hammer; if it breaks it is not a diamond. If this test were ever used on a diamond, possibly some fine stones would be ruined. There is another story somewhat opposite in thought. An East Indian potentate owned a fine diamond gem of which he was very fond. He decreed, upon his death, the stone should be destroyed by breaking it with a hammer. History does not record what eventually happened, but it is difficult to believe that the order was carried out.

To get back to the closely packed atoms, we find that they impede the passage of light through a gem. It is so dense (even though transparent) that light is forced to travel at slightly less than half its normal speed in air. We will readily admit that half of 186,000 miles per second is still a high rate of speed, but this resisance causes light rays to bend when entering a gem at certain angles. It is thus possible that a diamond (when correctly cut) can in a sense "gather" light rays and force them to reappear in a position for the viewer to clearly see them. This property is known as refraction, and the results of its operation are commonly known as brilliance.

This slowing of light has another effect. White light is made up of various colors (the spectrum) and each travels at

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9322 California Ave., South Gate, Calif. Phone 569-8041 90280 a slightly different rate of speed. The well known 186,000 miles per second is a median figure. When white light moves through a diamond, each color is slowed a different amount, and thus is bent to a slightly different angle than the other colors. When the light emerges from the gem, the colors are now separated, and we see flashes of each. This is known as dispersion, and is commonly referred to as "fire."

These marvelous light behaviors of diamond have fostered lore as part of the aura of diamond. It has often been said that a diamond will sparkle in the dark. This is not true, but all that is needed is the smallest ray of light striking a gem in the correct manner, and it will be reflect-back to the viewer.

Another feature sets diamond apart. Because it is the hardest of all minerals, only another diamond will wear it away; thus diamond is used as the abrasive to cut diamond gems. This process is relatively slow, necessitating that the cutting wheels turn at high speeds. This, in turn, calls for extremely vibration-free, meticulously balanced wheels. If the wheels were not perfectly balanced, the vibration would cause the stone to split (cleavage again) during the cutting process.

This has necessitated a professional that deals only with this gem. A diamond cutter does not know how to cut and polish rubies, garnets, emeralds and all other gems. The cutter of other gems does not know how to cut diamonds. There have been a few who have bridged the gap, and done both, but they found they had to master two entirely different techniques, and learn to use two quite different machines. It is true that both machines have some resemblance, but the sturdiness, speeds of rotation and the metals making up some of the parts are very different.

Diamonds have been known to man since before the advent of written history.

The earliest stones probably came from India, near a place called Golconda. The finest of these stones made their way into the treasuries of rulers of the Far East. It remained for an early French merchant named Tavernier to find and record the presence of many of these gems. When he returned with some of the gems and stories of even more fabulous ones, he created a furor.

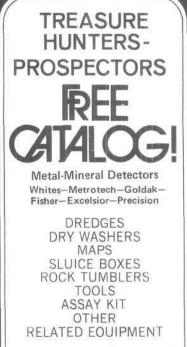
Most of these stones were not cut into gems as we know them, since cutting and polishing knowledge was poor at the time. The thing that is most surprising is that many of the stones had the names of the owners engraved upon them. As they passed from hand to hand (usually by conquest) the new owner would have the date and his name inscribed upon it. If there was no space for this, older ones were removed to make space for the new one. Examples of these carved stones are in museums today, but we still do not know exactly how the engraving was done! Another of the interesting facts concerning diamonds.

Today we have offered to us a number of diamond "substitutes." These are synthetic materials that are reported to be so nearly like diamond that the average person cannot tell the difference. All of them fall short in at least one of the characteristics named above, and may equal or surpass diamond in only one characteristic. Some of them never equal diamond in any characteristics.

If 'we summarize diamond's excellent properties, we find it is the hardest of any type of gem; it bends (refracts) light to an extreme, and widely separates (disperses) the colors of the spectrum. These are very imposing; no other mineral comes even close to all of them, and very few equal or surpass any of its optical characteristics.

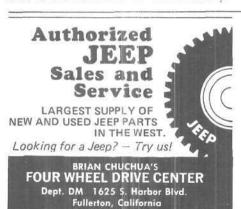
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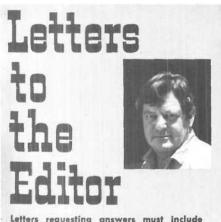
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In an editorial entitled "Time Is Running Out" in the July issue, we once again stated our position on the closure of back country public land and urged readers to express their opinions. We received so many letters it is impossible to print all of them. However, copies of all the letters have been forwarded to the Bureau of Land Management. We are also proud that many rackbound and off-road vehicle clubs have asked permission to reproduce the editorial. Any club or organization may do so. Single copies of the editorial can be obtained free by writing to DESERT Magazine, Box 1318, Palm Desert. California 92260. Here are a few of the opinious expressed in the letters.

It Is Your Land . . .

As lovers of the "Desert Land" we believe that only by getting close to the problem can you really understand it.

We have seen areas ravished by man's self-ishness. Bottles broken and signs obliterated by shooting. Garbage defacing nature's beauty. Many of these were in out-of-the-way spots. Areas greatly used were often the cleanest parts of the desert. This would show that people who care keep these areas clean for others to enjoy. Those bent on destruction of the land are also law destroyers.

We have enjoyed the desert for a limited amount of rockhounding, exploring by fourwheel-drive and motorcycle. In each case we have found the same types of individuals or groups. The considerate person will enjoy the land but not destroy it. These are the people to be considered in any planning of public lands.

The inconsiderate person will destroy the environment whether lawful or not. They must be treated separately.

The public land should remain for the public to enjoy. Restrictions should be imposed only for protection of individual sites which need preservation. Closing public lands from the public because of a small minority of selfish groups is not working in the public's interest.

Too many restrictions tend only to cause resentment of a great many users. This resentment could be partly the reason for such a large amount of destruction in our parks and public places.

Like so many issues before us, the extreme view is loudly exploited, a common sense approach is needed. Keep our public land PUB-LIC, and tell the public it is their land—to keep beautiful. That needs telling often and loud.

MR. & MRS. C. REED, Glen Ellen, California.

Old-Timer Speaks Out . . .

I am a long-time subscriber to *Desert* Magazine and have loved the desert long before it became popular to go there for fun or whatever.

I own two jeeps, a station wagon and a compact and travel roads or jeep trails to hunt ghost towns and mining camps. I know controls must be made to keep our natural treasures from being destroyed.

However, there are those of us who can no longer walk far to reach places which the conservationist would have us place off-limits. Is the natural out-of-doors to be denied to most of us so only a few hardy conservationists can see it to photograph and explore?

I believe I have some rights as a citizen to use the mountains and deserts as long as I don't damage or destroy. The deserts and mountains, after all, belong to no man, rather to God.

GEORGE WRIGHT, Rialto, California, I can only hope that one-tenth of your readers would take the few minutes required to knock out a letter to you, the B.L.M., their elected representatives, or maybe to Mr. Nixon.

I wrote to the President and received a nice reply from the Bureau of Outdoor Recreation, telling me I had misinterpreted the President's proclamation; nobody was going to close the public lands to vehicles and not to worry about it. Well, that scared the hell out of me and I've been worrying about it for the last — r months, as I've seen more land closures and more outcry from the eco-freaks to fence us out everywhere.

If the squeaking wheel gets the grease, then we off-roaders and back-roaders had better start squeaking with letters to the right places. I believe the biggest and best known conservation group claims about 150,000 members nationwide. I wonder how many off-road vehicle users, rockhounds and back-country campers who use public lands there are right here in Southern California? If just a fraction of them would squeak in unison I'll bet we'd get well greased with public lands for our use.

Feel free to add this and the copy of my letter to Mr. Penny to your B.L.M. file. I think it's an outstanding idea and one cause to which I hope all your readers will contribute.

> WARD CUMBIE, Downey, California,

A Canadian's View . . .

In regard to regulation of back country land, I can only speak as an outsider and not as an American citizen, although I have spent many delightful hours driving and hiking over the Southwest deserts.

I trust the B.L.M. will look at both sides of the coin and also the center—which includes people like myself—who are not interested in getting into an off-road vehicle and seeing how much damage I can do. Most people are sensible and don't litter and destroy. It's the five percent group that ruins it for all of us.

I would hate to see massive closures, but groups that are destructive should have to use certain areas (all sand) that wouldn't be harmed. A middle-of-the-road course must be taken.

I favor neither the 4WD or Sierra Club groups. Both, I am sure, have fanatics in their club rosters. It would be terrible if regulations were so strict that it would end up like England. We must keep our desert lands open, but common sense must prevail.

BRIAN C. WOOD, Vancouver, British Columbia Canada.

Not Bad Guys . . .

Your editorial, "Time Is Running Out," in the July issue has moved me to write another letter. It was just a year ago you printed my letter in the magazine and since then I've written many others trying to explain the position we desert users have taken regarding land closures. It seems that all of us off-road and back road habitues have been placed in the "Bad Guys-Fence 'Em Out" category by the ultra-conservationists.

Family Reaction . . .

In regard to the editorial, "Time is Running Out," I wish to express my thoughts and opinions also. We have a four-wheel-drive vehicle and for many, many years have enjoyed trips to the desert and back country. We also are rock-hounds, our girls like to go camping and if the government insists on limiting recreation and exploration my family and many others would be restricted from such activity. Keep the public lands open and let us continue to enjoy the outdoors.

DR. JACK C. CHASE.. La Jolla, California.

Too Much Power . . .

It is our opinion that the Bureau of Land Management and the U.S. Forest Service are asking for more power, more personnel and equipment, at great expense to the taxpayer, to control the land that belongs to the people, not because they are interested in what is happening to the desert, but for the money that can be collected from the people who use the land.

By charging for use and controlling it, around \$5,000,000 or more can be gained for the big spenders to play around with.

We have flown over the southern deserts for 25 years, and use the desert every chance we get. We enjoy it very much and admit some damage is done in places, but the damage done to the desert is nothing compared to the damage done to the minds of the taxpayers who lose all their freedom on the land that is theirs.

MR. & MRS. TED BROBECK, Fontana, California.

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Dear Bill.

Recently I decided that I wanted to become a treasure hunter.

Several of my friends were having pretty good luck at coin shooting so I decided that was the way to start. Most of them (the lucky ones) were using D-TEX detectors. On May 5th, I got the D-TEX "Winner" and was soon launched on my new career.

Hunting mostly around parks and school grounds, I had accumulated the vast amount of 264 coins and felt that was pretty good for a beginner in only 8 or 9 weeks. On July 13 (my lucky number) I got up at 5:00 A.M. and headed for a neighborhood park to try to make it an even 300. I found one penny by the swimming pool. Next the monkey bars and found nothing. Then near the swings I got a loud signal. It was so loud I thought it was foil and started on. Then changed my mind and decided to dig, thinking no coin ever sounded that loud even on the surface. I had dug down about 6 inches with my knife and thought I must of had a false reading.



TREASURE FOUND

No detector would detect a penny or even a silver dollar that deep. I stuck the loop over the hole again and the sound was so loud it almost scared me, so back to digging. The first thing was an old rotted pair of men's suede leather gloves, then I started getting coins. First 4 or 5, then a hand full.

By now the old blood pressure was getting up. I realized I was going to need better digging equipment, so looking furtively all around I quickly covered the hole. Then taking my "Winner" I nonchalantly sauntered back to the car. Looking all around and casually whistling and trying not to hurry. At last back to the car and away I went to get a shovel.

Hurrying back, I again strolled slowly back to my location, this time with a small shovel and again looking all around and being as casual as possible. I wasted no time digging it all out and into a sack. Quickly covered the hole, back to the car and away I go.

At home and still nervous as a cat, I washed and counted the grand total of 652 coins and with dates from 1911 to 1952. Makes you wonder, was it a stolen collection that the thief was afraid to spend and then later forgot where he had put them.

Anyway, it was my lucky day. I am now shooting for a total of 1,000 and don't have far to go. My total for the 8 to 9 weeks is now 916, so now I want your new Delux. If the "Winner" could find this, I should surely strike it rich with the "Delux". I also want to say "Thanks" for building such fine detectors.

> Bob Martin 2443 S. Beckley Dallas, Texas

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